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UNITED STATES DEPARTMENT OF AGRICULTURE
Bureau of Agricultural Chemistry and Engineering
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How to Discharge a Turpentine Still

Discharging or drawing the rosin from the still is one of the most important operations in the distillation of turpentine. Unless all conditions are just right at this stage of the distillation, there is sure to be a loss of turpentine or degrading or opaquing of the rosin, or possibly a fire.

Before the still is ready to discharge see that:

The vat has been well cleaned.

The cotton batting is evenly laid and securely held down under the cotton retaining strips, as shown on Bureau of Agricultural Chemistry and Engineering print NS-56, obtainable from the Naval Stores Station.

The strainers are clean and properly placed.

A bucket or two of water, a tub of sand and a shovel are on the deck and also on the floor near the rosin tail gate.

It is time to uncup when:

The spirits line is 9 oz. or 9-1/2 oz. on the graduated bottle or there is a slight yellowing of the spirits coming from the worm. (A leak in the worm will make an error in the spirits line which should be corrected. See "Directions for Running Crude Gum on a Turpentine Still.")

You have the fire under control so that the temperature has been gradually brought up to, but does not exceed, 315° F. for all classes of gum except very dirty, old gum or scrape. (This temperature for discharging has been found best by the Naval Stores Station.)

When all these conditions have been obtained, promptly turn off the water, draw the fire, put out all live coals with water, and leave the furnace door open.

CAUTION. Only after the fire is drawn and put out should you uncup the still. The foam should at that time be breaking under the collar, indicating that the charge is "cool" and still contains some water. If the foam is slow in settling, indicating too much water, close the furnace door

for a few minutes until the foam starts down. If the charge is flat when uncapped, it may be too hot to draw at once. Note carefully whether the thermometer reading, the "frying" sound, the smoke, or the odor of the vapors coming from the still indicate overheating. If so, there is danger of the rosin flashing and catching on fire when the tail-gate is opened, which may result in burning down the still. If the charge is too hot it is recommended that before drawing it a small stream of water be allowed to flow into the still with constant stirring until foam rises under the collar. Then cut off the water and turn out the charge with about four inches of foam.

As soon as the still is empty close the tail-gate, dump in the 1/2 barrel of water, and recharge as directed under "HOW TO CHARGE A TURPENTINE STILL."

Skimming

The skimming of gum charges is not recommended except when the gum is very dirty and carries more than 200 pounds of chips per charge. When necessary to skim gum or scrape the charge must be skimmed just before it "goes to water." Use the same precautions with fire as when turning out a charge. When chips have been removed, "cap up," turn on a small stream of water, and start the fire at the same time.

If the charge is skimmed just before discharging, in order to keep it from going flat allow a small stream of water to run into the still while skimming. In this case keep a very small fire or hot coals in the furnace, with the furnace door closed, until the skimming is finished. Then turn off the water, pull the fire quickly, put it out as usual, and discharge the still.

General Precautions

There should be no fire on the grate when the still is uncapped. The hot furnace with the door closed continues to heat the still and will usually boil all the water out of the charge after the still is uncapped. If it is necessary to start a new fire to get the charge down, make it small and keep the furnace door closed to avoid setting the still on fire from turpentine fumes in the air. This is not often necessary.

You may lose two grades of rosin if the charge is too hot. You will lose time in straining and make dirty or opaque rosin if the charge is too cold. Therefore, you should be very careful to get all the conditions just right before pulling the fire.

See that the strainers are large enough to take care of the entire charge. Rosin held in the still because strainers are not large enough to take the whole charge is invariably darkened and will probably lower the grade of the whole charge. In a 3-strainer system the bottom and middle strainers should be as long as the vat. In a 4-strainer system the bottom, second and third from the bottom should be as long as the vat. (See instructions for building vats and strainers, NS-56.) The chip catcher or top strainer is usually about 8 feet long and 8 to 10 inches deep.

